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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,269	10/09/2003	Jin-Kug Lee	2557-000173/US	5992

30593 7590 04/05/2005

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EXAMINER	
NGUYEN, HAI L	

ART UNIT	PAPER NUMBER
2816	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/681,269	LEE ET AL.	
	Examiner	Art Unit	
	Hai L. Nguyen	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-20 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-17 and 25* is/are rejected.

7)☒ Claim(s) *18-20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-10 and 21-24, drawn to a signal generating circuit, classified in class 327, subclass 100.

   II. Claims 11-20 and 25, drawn to a charge pump, classified in class 327, subclass 536.

2. The inventions are distinct, each from the other because of the following reasons: The inventions of groups I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, the subcombination of group I has separate utility, i.e., the signal generating circuit can be used in many different types of circuits such as, for example, a voltage level shifting circuit. The subcombination of group II has separate utility, i.e., for example, for use in a delay locked loop circuit. Therefore, each of the invention may, by itself, be patentable over prior art. See MPEP § 806.05(d).

3. During a telephone conversation with attorney John A. Castellano on 4/01/2004 a provisional election was made with traverse to prosecute the invention of group II, claims 11-20 and 25. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-10 and 21-24 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification

4. Claims 18-20 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. A phase locked loop limitation of claims 18-20 do not further define the charge pump circuit of claim 17.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 is indefinite because the recited limitations as "second differential switches which are connected between the second output terminal and the first current sink and respond to second differential switching control signals; third differential switches which are coupled to the second output terminal and the second current source and respond to the first differential switching control signals; and fourth differential switches which are connected between the second output terminal and the second current sink and respond to the second differential switching control signals", in the last 9 lines, is unclear. It is not clear which preferred embodiment is referred to by those limitations. Insofar as understood, no such limitations are seen in the drawings.

Claims 12-16 are rendered indefinite by the deficiencies of independent claim noted above.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 17 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Dreyer (US 5,740,213).

With regard to claims 17 and 25, Dreyer discloses in Figs. 3, 8, 15, 16 a charge pump (1550), and a method of use thereof, comprising a first input terminal (1502); a second input terminal (1504); a third input terminal (1506); a fourth input terminal (1508); a first output terminal (1570); a second output terminal (1570a); a pumping circuit which charges the first output terminal to a first voltage and simultaneously discharges the second output terminal into a second voltage in response to first differential signals input to the first and second input terminals, or charges the second output terminal to the first voltage and simultaneously discharges the first output terminal into the second voltage in response to second differential signals input to the third and fourth input terminals; and a common mode feedback circuit (80) which is coupled to the first and second output terminals and holds a common voltage (V_{CM}) of output voltages of the first and second output terminals to a predetermined value (V_{REF}), wherein

the output voltage of the first output terminal and the output voltage of the second output terminal are differential signals.

Conclusion

9. Regarding claims 11-16, the patentability thereof cannot be determined because of their indefiniteness.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Abidin et al. (US 6,686,7945) is cited as of interest because it discloses a differential charge pump circuit.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai L. Nguyen whose telephone number is 571-272-1747 and Right Fax number is 571-273-1747. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The official fax phone number for the organization where this application or proceeding is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1562.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HLN
April 3, 2005

TIMOTHY P. CALLAHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800